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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,467	10/01/2003	Takashi Onishi	N9460.0016/P016	5529
24998	7590	07/09/2004	EXAMINER	
DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP			QUASH, ANTHONY G	
2101 L STREET NW			ART UNIT	
WASHINGTON, DC 20037-1526			PAPER NUMBER	
			2881	

DATE MAILED: 07/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/674,467	Applicant(s) ONISHI ET AL	
	Examiner Anthony Quash	Art Unit 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/01/2003</u> . | 6) <input type="checkbox"/> Other: ____. |

Claim Objections

Claims 1-2,4-5 are objected to because of the following informalities:

The claims are objected to for using the word "type". The word "type" cannot be used to define any structure or apparatus. Applicants' are advised that this word should be removed from the claims.

Claim 5, is further objected to for the word "system" in line 1 of claim 5. It is believed by the examiner that applicants meant to use the word "method" instead of the word "system" in order to distinguish the claim 5 from claim 2. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2,4-5 are rejected under 35 U.S.C. 102(b) as being anticipated by [WO 01/11431]. As per claims 1,4, [WO 01/11431] discloses an electron beam lithography system/method in which an electron beam is scanned according to a predetermined drawing program to draw circuit patterns on a target wafer, the system comprising a calculating means that calculates beforehand thermal deformation occurring in the

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target wafer, the thermal deformation being caused by applying the electron beam, calculating from the result of the calculation compensation data required to compensates the amount of discrepancy in the electron beam applying position, and then storing the compensation data, and a control means that compensates at the time of electron beam lithography, according to the compensation data read out from the calculating means, at least one of a dose and an applying position of the electron beam applied according to the drawing program. See [WO 01/11431] abstract, fig. 1, page 5, lines 19-21, page 7 lines 10-17, page 10 lines 1-10, page 15 lines 15-22, page 16 lines 1-21, page 17 lines 1-6,19-22, and col. 18 line 1.

As per claims 2,5, [WO 01/11431] discloses an electron beam lithography system/method in which an electron beam is scanned according to a drawing program that is predetermined but can also be changed to draw circuit patterns on a target wafer, the system/method comprising a calculating means that calculates thermal deformation occurring in the target wafer, the thermal deformation being caused by the electron beam applied according to the drawing program, and calculates from the result of the calculation compensation data required to compensate the amount of discrepancy in electron beam applying position, and a control means that compensates, according to the compensation data read out from the calculating means at least one dose and an applying position of the electron beam applied according to the drawing program, wherein the calculating means calculates the compensation data in real time at the time of electron beam lithography. See [WO 01/11431] abstract, fig. 1, page 5, lines 19-21,

page 7 lines 10-17, page 10 lines 1-10, page 15 lines 15-22, page 16 lines 1-21, page 17 lines 1-6, 19-22, and col. 18 line 1.

Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawakami Kenichi [JP 09-251941], which is listed in applicants' information disclosure statement. As per claims 1,4, Kawakami Kenichi [JP 09-251941] discloses an electron beam lithography system/method in which an electron beam is scanned according to a predetermined drawing program to draw circuit patterns on a target wafer, the system comprising a calculating means that calculates beforehand thermal deformation occurring in the target wafer, the thermal deformation being caused by applying the electron beam, calculating from the result of the calculation compensation data required to compensate the amount of discrepancy in the electron beam applying position, and then storing the compensation data, and a control means that compensates at the time of electron beam lithography, according to the compensation data read out from the calculating means, at least one of a dose and an applying position of the electron beam applied according to the drawing program. See Kawakami Kenichi [JP 09-251941] abstract, 7-11, paragraphs [0013-0020, 0034, 0043-0050].

As per claims 2,5, Kawakami Kenichi [JP 09-251941] discloses an electron beam lithography system/method in which an electron beam is scanned according to a drawing program that is predetermined but can also be changed to draw circuit patterns on a target wafer, the system/method comprising a calculating means that calculates thermal deformation occurring in the target wafer, the thermal deformation being caused by the electron beam applied according to the drawing program, and calculates from the

result of the calculation compensation data required to compensate the amount of discrepancy in electron beam applying position, and a control means that compensates, according to the compensation data read out from the calculating means at least one dose and an applying position of the electron beam applied according to the drawing program, wherein the calculating means calculates the compensation data in real time at the time of electron beam lithography. See Kawakami Kenichi [JP 09-251941] abstract, 7-11, paragraphs [0013-0020, 0034, 0043-0050].

As per claims 3, Kawakami Kenichi [JP 09-251941] discloses calculating means calculates the compensation data by means of computer simulation. See Kawakami Kenichi [JP 09-251941] abstract, 7-11, paragraphs [0013-0020, 0034, 0043-0050].

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 6,440,619 to Feldmann is considered pertinent because of its discussion on a method of distortion compensation by irradiation of adaptive lithography membrane masks.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Quash whose telephone number is (571)-272-2480. The examiner can normally be reached on Monday thru Friday 9 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (571)-272-2477. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A. Quash

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6/21/04


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